

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>904273</b>	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416																									
International application No. <b>PCT/JP2004/010954</b>	International filing date (day/month/year) <b>30.07.2004</b>	Priority date (day/month/year) <b>30.07.2003</b>																								
International Patent Classification (IPC) or national classification and IPC <b>H01F1/26, 1/33</b>																										
Applicant <b>SUMITOMO ELECTRIC INDUSTRIES, LTD.</b>																										
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>5</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <b>2</b> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <table border="0"><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report																									
Name and mailing address of the IPEA/JP	Authorized officer																									
Facsimile No.	Telephone No.																									

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input checked="" type="checkbox"/> This report is based on translations from the original language into the following _____ which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p>
2.	<p>With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-15</u> _____ as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. _____ as originally filed/furnished</p> <p>nos.* <u>1-8</u> _____ as amended (together with any statement) under Article 19</p> <p>nos.* _____ received by this Authority on _____</p> <p>nos.* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>sheets <u>1-6</u> _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p>
3.	<p><input checked="" type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input checked="" type="checkbox"/> the claims, nos. <u>9-15</u> _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>
4.	<p><input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
1. Statement	
Novelty (N)	Claims <u>1-8</u> YES Claims _____ NO
Inventive step (IS)	Claims _____ YES Claims <u>1-8</u> NO
Industrial applicability (IA)	Claims <u>1-8</u> YES Claims _____ NO
2. Citations and explanations (Rule 70.7)	
	<p>Document 1: JP 10-503807 A (Höganäs AB.), 7 April 1998, entire text &amp; SE 9402497 &amp; CA 2195423 A &amp; EP 0765199 A &amp; PL 0318217 A &amp; CN 1153490 A &amp; BR 9508301 A &amp; US 5754936 A &amp; AT 0193472 A &amp; DK 0765199 A &amp; ES 2148534 A &amp; KR 0267836 A &amp; PT 0765199 A &amp; WO 96/2345 A</p> <p>Document 2: WO 02/080202 A (Sumitomo Electric Industries, Ltd.), 10 October 2002, entire text</p> <p>Document 3: JP 8-236329 A (General Motors Corporation), 13 September 1996, paragraphs [0020], [0028] and [0029] &amp; CA 2159673 A &amp; EP 0717421 A &amp; US 5629092 A &amp; DE 69516252 A</p> <p>Claims 1 to 8</p> <p>Document 1 sets forth a feature wherein iron powder having a phosphate membrane on the surface is mixed with 0.2 to 0.6 wt% of polyphenyl ether with respect to the weight of the iron powder, and a feature wherein the iron powder is compressed at a temperature below the glass transition temperature of thermoplastic resin, and the final heat treatment takes place at a temperature which is higher than the curing temperature of the thermoplastic resin.</p>

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

Document 2 sets forth a feature wherein polyphenylene ether is used as the organic substance to form composite magnetic materials in the prior art; a feature wherein composite magnetic particles having a coating layer on the surface of metal magnetic particles are bonded with an organic substance such as polytetrafluoroethylene, thereby improving heat resistance; a feature wherein the organic substance is contained within a range of 0.1 wt% to 1.0 wt% with respect to the composite magnetic particles, and after molding, the molded substance is heat treated at a temperature of 420°C.

Document 3 sets forth a feature wherein with regard to a soft magnetic core (ferromagnetic particles), the lubricant particles made from PTFE and the particles of a material which bonds with the lubricant particles are constituted as a matrix-forming polymer such as polyphenylene ether; and a feature wherein approximately 0.4 wt% of iron particles comprises an outer layer of lubricant particles-bonding material particles, and an annular soft magnetic core is formed by compression molding said iron particles.

Moreover, it would be easy for a person skilled in the art to conceive of having the polytetrafluoroethylene set forth in document 2 serve as an iron molding which uses thermoplastic resin as a bonding material, as an alternative to the organic substance set forth in document 1, and to set the total of bonding material particles and lubricant particles with respect to the iron particles to approximately 0.4 wt% as described in document 3.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
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Determining the dimensions of a hollow ring-shaped powder magnetic core is a matter which a person skilled in the art should design as necessary, taking into account the applications and the like of said powder magnetic core. In addition, an invention obtained by applying the heat treatment method set forth in documents 2 and 3 to the invention set forth in document 1 entails applying the same magnetic materials and production method as the invention of this application in the light of the embodiments set forth in the description of this application, therefore a person skilled in the art would be capable of obtaining the same hollow core powder magnetic core set forth in the invention of this application.